

WHAT IS CLAIMED IS:

1. A dispenser module, comprising:
a housing;
5 a fluid reception chamber provided within said housing and having a rod passageway formed in the fluid reception chamber and at least one port in fluid passage communication with said passageway;
a rod received in said rod passageway;
locking means for preventing fluid reception chamber adjustment in conjunction with an
10 adjustment in position of said rod.
2. The dispenser module of claim 1 wherein said fluid reception chamber is formed of a cold flow block of material with a hole formed therein to define said rod passageway.
3. The dispenser module of claim 2 further comprising compression means for imposing compressive forces on said fluid reception chamber.
- 15 4. The dispenser module of claim 3 wherein said compression means includes a set of Belleville washers.
5. The dispenser module of claim 1 wherein said locking means includes a projection/recess relationship between said housing and said fluid reception chamber.
6. The dispenser module of claim 5 wherein said projection/recess relationship includes an
20 annular projection in one of said housing and fluid reception chamber and a receiving recess formed in a corresponding one of said housing and fluid reception chamber.
7. The dispenser module of claim 6 wherein said projection is formed closer to a first end of said fluid reception chamber than a second end.

8. The dispenser module of claim 7 wherein said first end is a front discharge end of said
25 fluid reception chamber.
9. The dispenser module of claim 8 wherein said projection is formed at a forwardmost end
portion of said fluid reception chamber.
10. The dispenser module of 8 wherein said fluid reception chamber has the projection.
11. The dispenser module of claim 5 wherein said projection extends over a majority of a
30 periphery of said fluid reception chamber.
12. The dispenser module of claim 11 wherein said projection extends continuously without
interruption.
13. The dispenser module of claim 5 wherein said projection extends continuously without
interruption.
- 35 14. The dispenser module of claim 13 wherein said projection is an annular projection ring.
15. The dispenser module of claim 14 wherein said projection extends essentially entirely
about the periphery of said fluid reception chamber.
16. The dispenser module of claim 13 wherein said projection extends radially outward from
a main body of said fluid reception chamber.
- 40 17. The dispenser module of claim 16 wherein said projection and main body are formed as
an integrated, monolithic unit.
18. The dispenser module of claim 16 wherein said projection has a radial extension that
represents 5 to 15% of a maximum diameter of said fluid reception chamber.
19. The dispenser module of claim 5 wherein said projection extends about a peripheral area
45 of said mixing chamber and said projection includes multiple projection members arranged about
that peripheral area of said fluid reception chamber.

20. The dispenser of claim 1 wherein said rod is dimensioned to seal off an exit opening in said port upon reciprocation of said rod past said exit opening.

21. The dispenser module of claim 20 wherein there are at least two radially extending

50 chemical ports formed in said fluid reception chamber and said rod passageway is represented by an axial through passageway in a cold flow block of material forming said fluid reception chamber.

22. The dispenser module of claim 1 further comprising compression means and wherein said fluid reception chamber is formed of a cold flow material which is compressed within said

55 housing by said compression means, and rod is dimensioned relative to said fluid reception chamber such that in use a sticking relationship is assumed and said fluid reception chamber retains a pre-stick position despite said compression means being potentially adjustable in configuration upon being subjected to compression.

23. The dispenser module of claim 1 wherein said fluid reception chamber includes two

60 chemical inlet ports that open into said rod passageway for mixing when said rod is in a retracted state.

24. The dispenser module of claim 23 wherein said rod is dimensioned so as to seal off said chemical inlet ports when in a non-retracted state.

25. The dispenser module of claim 24 further comprising compression means, and wherein

65 said fluid reception chamber is formed of a cold flow material subject to compressive forces of said compression means.

26. The dispenser of claim 25 wherein said locking means comprises an enlarged portion of said fluid reception chamber which is received by a reception area in said housing.

27. The dispenser module of claim 26 wherein said enlarged portion is an annular projection
70 formed at a forward discharge end of said fluid reception chamber.

28. The dispenser module of claim 1 wherein said dispenser module is a two or more
chemical mixing module comprising in axial series a housing back closure member, compression
means, the fluid reception chamber which is formed of a cold flow material and includes at least
two chemical inlet ports opening into said rod passageway and a front closure member.

75 29. The dispenser module of claim 28 wherein said housing front and back closure members
are releasably fixed to said housing.

30. The dispenser module of claim 1 further comprising compression means and wherein said
fluid reception chamber is formed of a cold flow material and compressed by said compression
means, and wherein said housing has an open front end and an open rear end, and said front and
80 rear are closed off by respective front and rear closure members.

31. The dispenser module of claim 30 wherein at least one of said front and rear closure
members are in a threaded engagement with said housing.

32. The dispenser module of claim 31 wherein each of said front and rear closure members
are in threaded engagement with said housing.

85 33. The dispenser module of claim 32 wherein said compression means includes Belleville
washers.

34. The dispenser module of claim 1 wherein said fluid reception chamber is formed of
Teflon material and includes two chemical inlet ports which open into said rod passageway and
said housing has chemical feed apertures in communication with said chemical inlet ports.

90 35. A mixing module for a two chemical component dispenser system, comprising:
a housing having a reception cavity and front and rear ends;

a mixing chamber formed of a cold flow material and received in said housing, and said mixing chamber having first and second chemical ports and a rod passageway formed therein;

a rod received in said rod passageway;

95 a compression device which is positioned within said housing in a compression relationship with said mixing chamber;

a front closure cap releasably secured to the front of said housing and having a chemical discharge cavity formed in said front closure cap;

100 a rear closure cap releasably secured to the rear of said housing and having a rod reception cavity formed in said rear closure cap.

36. The mixing module of claim 35 wherein at least one of said front and rear closure caps are in threaded engagement with said housing.

37. The mixing module of claim 36 wherein each of said front and rear closure caps are in threaded engagement with said housing.

105 38. The mixing module of claim 37 wherein said front closure cap is secured to said housing so as to be hand removable without tools and wherein said rear closure cap has tool engagement means for facilitating tool removal of said rear closure cap from said housing.

39. The mixing module of claim 35 wherein said mixing chamber includes rod stick movement prevention means for preventing movement of said mixing chamber with the rod as a unit relative to the compression means when the rod becomes stuck to the mixing chamber during operation.

110 40. The mixing module of claim 35 wherein said mixing chamber and housing include male/female locking members which are positioned to preclude axial movement of said mixing chamber as a whole within said housing.

- 115 41. The mixing module of claim 40 wherein said male locking member includes an annular front ring extension in said mixing chamber which is received in an annular female recessed section at a front region of said housing.
42. The mixing module of claim 35 wherein said housing includes a solvent fill port opening into said housing and a solvent port cover which is releasably fixed to said housing.
- 120 43. The mixing module of claim 42 wherein said solvent port cover includes threads that engage port opening threads of said housing.
44. The mixing module of claim 43 further comprising a seal member which seals off said solvent port opening together with said port cover.
45. A mixing module, comprising:
- 125 a housing;
- a mixing chamber formed of a cold flow material and having a chemical inlet port and a rod passageway;
- a rod received within said mixing chamber;
- a compression device positioned within said housing and in a compressive relationship
- 130 with said mixing chamber, and
- said mixing chamber and said housing being in a male/female locking relationship.
46. The mixing module of claim 45 wherein said male/female locking relationship includes an annular male projection on one of said housing and mixing module and a corresponding female recess receiving said male projection on an opposite one of said housing and mixing
- 135 module.

47. The mixing module of claim 45 wherein said mixing chamber an enlarged forward end forming a male locking member and said housing has a recess formed in a front end for receiving said enlarged forward end of said mixing module.

48. The mixing module of claim 45 wherein said housing has open front and rear ends and
140 said mixing module further comprises front and rear closure caps releasably secured to said housing.

49. The mixing module of claim 48 wherein each of said front and rear closure caps are threadably secured to said housing.

50. The mixing module of claim 49 further comprising a solvent access closure cap in
145 threaded engagement with a wall of said housing.

51. A mixing module, comprising:

a housing;

a mixing chamber formed of a cold flow material and having a rod passageway and a pair of chemical inlet ports opening into said rod passageway;

150 a valving rod received within said mixing chamber and adjustable between a chemical inlet ports seal off mode and a chemical free passage mode;

compression means within said housing for compressing the cold flow material of said mixing chamber, and

said mixing chamber and said housing having means for preventing adjustment of said
155 mixing chamber relative to said compression means when said rod and mixing chamber temporarily join together in dispensing operation.

52. A method of assembling a mixing module comprises; inserting into a housing (i) compression means, (ii) a reciprocating rod, (iii) a mixing chamber, with the mixing chamber receiving the rod and being placed in a state of compression by the compression means;

160 arranging for locking means locking between the mixing chamber and the housing to preclude mixing chamber movement despite a rod stick relationship between the rod and the mixing chamber.

53. The method of claim 52 wherein assembling the mixing module includes releasably securing a front cap and a rear cap to said housing.

165 54. The method of claim 52 further comprising inserting solvent into a solvent opening formed in the mixing module housing and plugging the opening with a solvent opening plug cap.

55. A method of dispensing a foam mix comprising preventing relative movement of a mixing chamber and the housing receiving that mixing chamber despite a sticking together of a valving rod reciprocating within the mixing chamber and despite the potential for movement of

170 compression means compressing the mixing chamber were if not for the locking means.